



## 1. Scope

### 1.1. Content

This specification describes characteristic, tests and quality requirements for the **UMCC MICRO-COAX RECEPTACLE, GENERATION 4 (P/N: 2334884-1)**

### 1.2. Qualification

When testing the named products the following specified specifications and standards shall be used. All tests have to be done using the applicable inspection plan and product drawing.

## 2. Applicable Documents

The following mentioned documents, if they are referred, are part of this specification. In case of conflict between the requirements of this specification and the product drawing or in conflict between the requirements of this specification and the referenced documents, this specification has got precedence.

### 2.1. Tyco Electronics Document

501-78726 Test Report

## 3. Requirements

### 3.1 Design and Construction

The product described in this paper is a SMT Type Micro Coaxial RF Receptacle, This SMT type Micro coaxial RF Receptacle products are designed for Mobile phones, Wireless LAN, Mini-PCI, Bluetooth, PDA, GPS, electronic measuring instruments, etc

### 3.2 Materials

Antenna Element: Stainless Steel, Nickel Plating

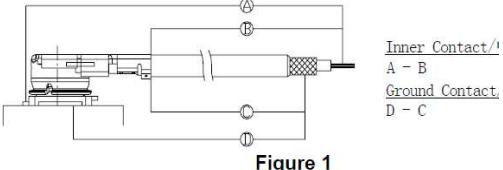
### 3.3 Rating

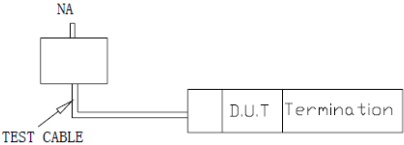
Rated Voltage: 60VAC (R.M.S)  
Frequency Range: DC 0 ~ 12GHz  
Character Impedance: 50±5 Ω  
Operate Temperature: -40 °C ~ +85 °C  
Storage Temperature Limit : -10 ~ 40 °C  
Operate Humidity: 95% MAX  
Guaranty Number of time for Reflow : 2 times

### 3.4 Performance Requirement and Test Description

The Product shall be designed to meet the electrical, mechanical and environmental performance requirement specified in Table.1. All test shall be performed in the room temperature, unless otherwise specified.

2.5 Test Requirements and Procedures Summary

Para.	Test Items	Requirements	Procedures
2.5.1	Examination of Product	Meets applicable requirements specified, customer drawing, and application specification.	Visual inspection No physical damage.
<b>Electric Performance</b>			
2.5.2	Contact Resistance	<p>( IEC512-2-1(2a) ) Solder the receptacle connector to the test board and mate the plug connector together , then measure the contact resistance as Shown in figure 1 by the four terminal method.</p> <p>Open circuit voltage : 20mV MAX Circuit current : 10mA MAX</p>  <p style="text-align: right;">Inner Contact/ A - B Ground Contact D - C</p>	<p>Inner Contact Initial: 20 m Ω MAX. After: 20 m Ω MAX. Ground Contact Initial: 20 m Ω MAX. After: 20 m Ω MAX</p>
2.5.3	Insulation Resistance	<p>Mate the plug and receptacle connector together , and then apply DC 200 V Voltage.</p> <p>between the inner contact and the ground contact in accordance with IEC 512-4-1(3a)</p>	<p>Initial: 500 MΩ Min. After test : 100 MΩ Min.</p>
2.5.4	Dielectric withstanding voltage	<p>Mate the plug and receptacle connector Together, and then apply AC 200 V between the inner contact and the ground contact in accordance with IEC 512-4-1(4a)</p>	<p>No flashover, No spark over, No excess leakage, No breakdown</p>

2.5.5	V.S.W.R	<p>Measure the V.S.W.R as shown in figure 2 by the network analyzer</p> <p>Frequency : DC~12GHz</p> <p style="text-align: center;"><b>Figure 2</b></p> 	<p>1.3 Max. (DC~3GHz) 1.4Max. (3~6GHz) 1.5Max. (6~9GHz) 1.6Max. (9~12GHz)</p>
<b>Meannical Performance</b>			
2.5.6	Un-mating Force	<p>IEC 512-15-4(15d) Solder the receptacle connector to the test board and mate the plug connector , then measure the un-mating force at speed of 25±3mm/minutes along by the push-push machine</p>	<p>1.Initial : 4N (0.4Kgf) Min. 2.After 30 Cycles : 2N(0.2Kgf) Min.</p>
2.5.7	Durability	<p>Mate and un-mate the receptacle connector(soldered to the test board) and plug connector 100 cycles at the speed of 25±3mm/minutes along the mating direction by the push-push machine</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 3.5.2</p>
2.5.8	Vibration	<p>IEC 512-6-4(6d) Apply the following vibration to the mating Connector. During the testing, run 100mA DC to check electrical discontinuity. Frequency: 10Hz→ 100Hz→ 10Hz/approx. 20minutes. Half amplitude, Peak value of acceleration: 1.5mm or 59m/s<sup>2</sup>(6G) Directions,cycle:3 mutually perpendicular direction, 2cycles about each direction</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 3.5.2 No discontinuities of 1μs or longer duration</p>



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2.5.9	Shock	<p>IEC 512-6-3(6c)            The object of this test procedure is to detail a standard method to assess the ability of a connector to withstand specified severity of Mechanical shock.            Peak value of acceleration:735m/s<sup>2</sup>(75G)            Duration :11ms            Wave form : half sinusoidal            Directions, cycle : 6 mutually perpendicular direction, 3cycles about each direction</p>	<p>Appearance: No abnormality            Contact Resistance:            Shall meet : 3.5.2            No discontinuities of 1μs or longer duration</p>
<b>Environment Performance</b>			
3.5.10	Humidity	<p>Apply the following environment to the mating connector in accordance with IEC 512-11-3(11c)            Temperature: 25~65°C            Humidity : 90~95%R.H            Duration: 96 hours</p>	<p>Appearance: No abnormality            Contact Resistance:            Shall meet 3.5.2             Insulation Resistance:            Shall meet 3.5.3             Dielectric withstanding voltage            Shall meet 3.5.4</p>
3.5.11	Thermal Shock	<p>Apply the following environment to the mating connector in accordance with IEC 512-11-4(11d)             Temperature: -55~85°C            Transition time : 5min. MAX            Cycles: 5 Cycles</p>	<p>Appearance: No abnormality            Contact Resistance:            Shall meet 3.5.2             Insulation Resistance:            Shall meet 3.5.3             Dielectric withstanding voltage            Shall meet 3.5.4</p>
3.5.12	Resistance to soldering heat	<p>According to 8.8.1,Apply reflow soldering Condition.            Measurement after 24h+/-2h.</p>	<p>Appearance: No abnormality            Contact Resistance:            Shall meet 3.5.2             Insulation Resistance:            Shall meet 3.5.3             Dielectric withstanding voltage            Shall meet 3.5.4</p>



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3.5.13	Salt Spray	<p>IEC 512-11-6(11f) Apply the following environment to the mating connector</p> <p>Temperature: 35±2°C Relative Humidity : 90~98%R.H Salt water density: 5±1% Duration : 48 hours</p>	<p>Appearance: No abnormality Contact Resistance: Shall meet 3.5.2</p>
3.5.14	Solderability	<p>Apply the following environment to the mating connector</p> <p>Temperature: 245±2°C Duration : 3~5 second</p> <p>Test sample should be observed by the Magnification of 10times after the test.</p>	<p>At least 95% covered by a continuous new solder coating.</p>

Table. 1

### 2.6 Test Sequence and Sample Quantity

Test Item	Test Group								
	A	B	C	D	E	F	G	H	I
	(a)								
Examination of product	1,	1,6	1,5	1,6	1,6	1,6	1,6	1,4	1,3
Contact Resistance		2,7	2,4	2,4	2,7	2,7	2,7	2,5	
Insulation resistance					3,8	3,8	3,8		
Dielectric Withstanding Voltage					4,9	4,9	4,9		
V.S.W.R	2,								
Un-mating Force		3,5							
Durability		4,							
Vibration			3,						
Shock				3,					
Humidity					5,				
Thermal Shock						5,			

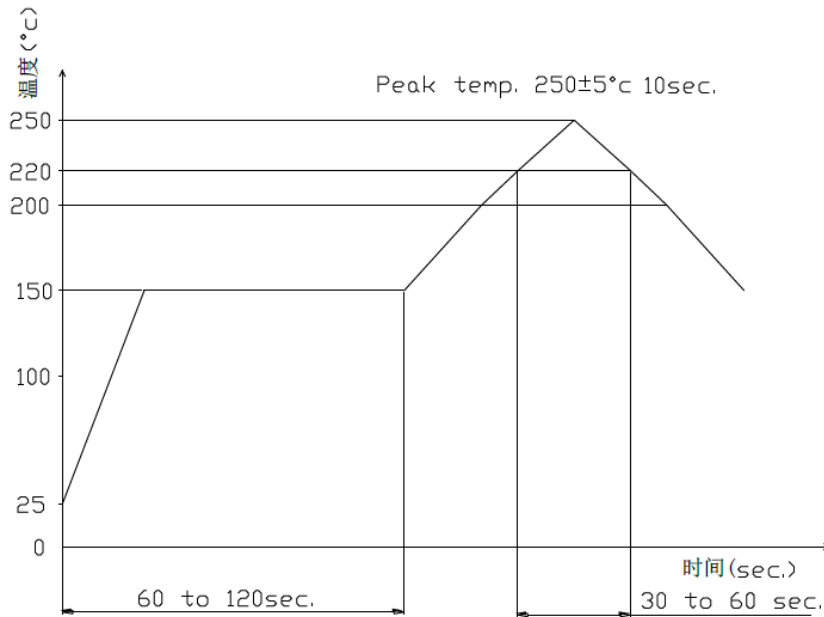


High Temperature Life							5,		
Salt Spray								3,	
Solderability									2,
Sample QTY(PCS)	5	5	5	5	5	5	5	5	5

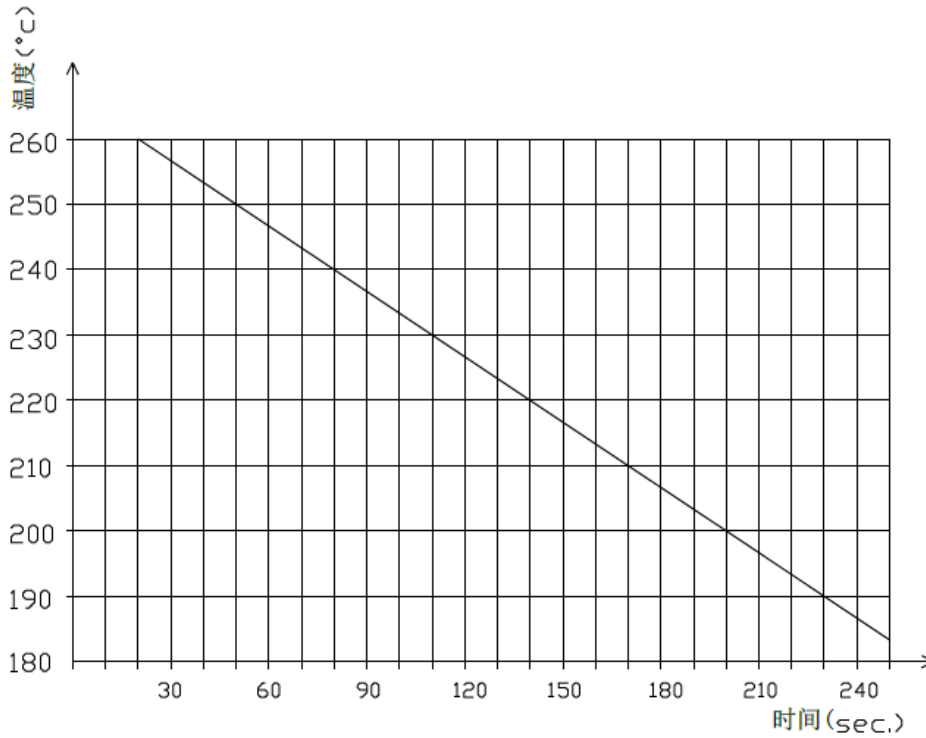
4. SMT Temperature Curve

4.1 Temperature profile of reflow soldering

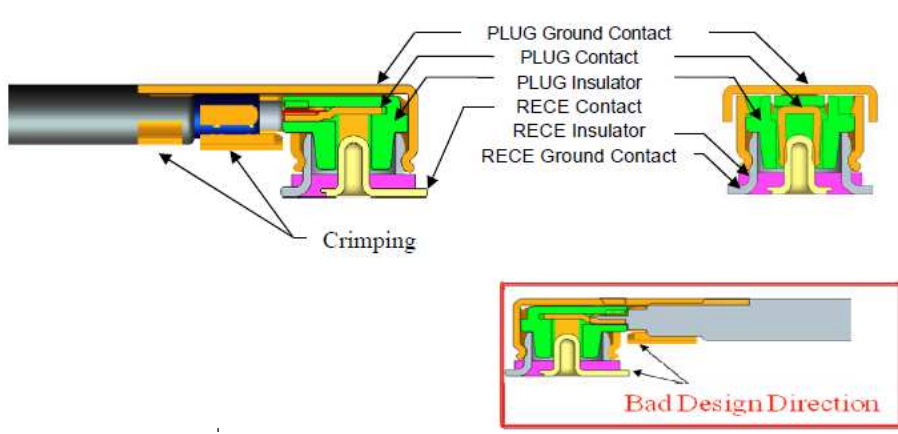
4.1.1 Recommended tem. & time relative curve of Re-flow.



4.2.2 Extreme tem. &time curve of Re-flow



5. Usage Precaution

No	Items	Test Condition	Specifications
5.1	PCB (Note polarity requirements of the PCB design)	 <p>PLUG Ground Contact PLUG Contact PLUG Insulator RECE Contact RECE Insulator RECE Ground Contact</p> <p>Crimping</p> <p>Bad Design Direction</p>	<p>With the height of the smaller USS range of products PCB design process, you should avoid the RECE Contact and Plug Ground Contact curling in the same direction to prevent the careless press rotating Plug Ground Contact and RECE Contact shorted.</p>



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5.2	Stockpile condition	1) Storage Temperature -10 °C ~ + 40 °C 2) Operating humidity 85% R.H.MAX 3) Validity: Use within 6 months after receiving the Product	
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